

**BALD HEAD ISLAND SETTLEMENT MONITORING SURVEYS  
CYCLE 2, REPORT 2  
SEPTEMBER 2007**

**Introduction**

The 2nd set of monitoring surveys (2<sup>nd</sup> cycle) for the Settlement Agreement between the Village of Bald Head Island and the United States Army Corps of Engineers was taken in September 2007. The criteria to be used in examining the surveys is to be a continuous passage through Smith Island Channel, Baldhead Shoal Channel Reach 1 and Baldhead Shoal Channel Reach 2 with a minimum bottom width of 500 feet at a depth of -42 feet mean lower low water (mllw). This report is the second in this series.

**Data**

The 1st set of monitoring surveys taken in June 2007 is displayed in Figure 1 and is labeled June 2007 Surveys. Figure 2 is a plot of surveys taken in September 2007 and Figure 3 is a difference plot between the June and September surveys.

A plot for Smith Island Channel of the navigable widths at a depth of -42 feet mllw (navigable depth) is shown in Figures 4 and 5. MLLW is 2 inches lower than mlw at Bald Head Island. Plots of the minimum channel cross sections at stations 42+00 and 46+00 are shown in Figures 6 and 7. The baselines for the cross section plots are shown in Figure 1.

A plot for Baldhead Shoal Channel Reach 1 of the navigable widths at a depth of -42 feet mllw is contained in Figures 8 and 9. Plots of the minimum channel cross sections in the vicinity of the spit at stations 19+00, 39+00, and 40+00 are shown in Figures 10, 11, and 12.

A plot for Baldhead Shoal Channel Reach 2 of the navigable widths at a depth of -42 feet mllw is contained in Figures 13 and 14. Plots of the minimum channel cross sections at stations 45+00 and 46+00 are shown in Figures 15 and 16.

**Conclusion**

The minimum navigable width at a depth of -42 feet mllw is more than 500 feet at all stations in Baldhead Shoal Channel Reach 1 and 2 and Smith Island.

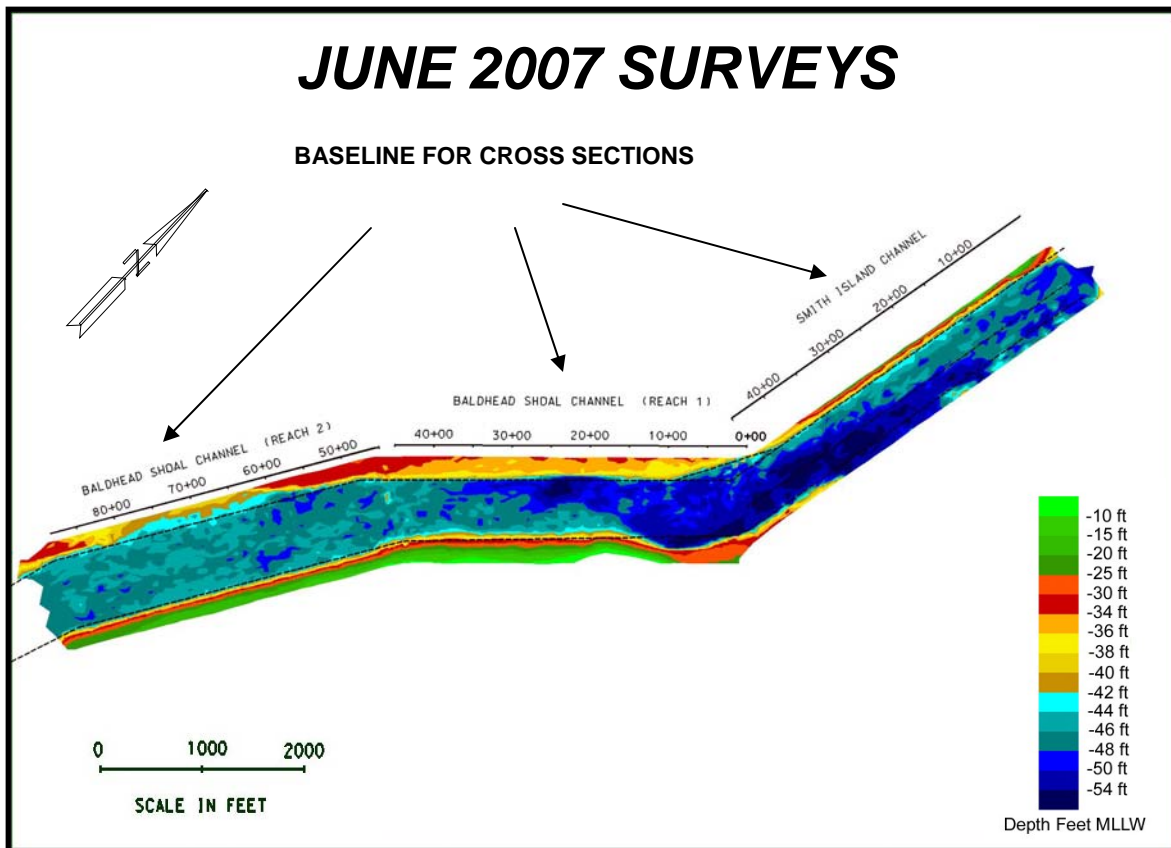


Figure 1 June 2007 Surveys

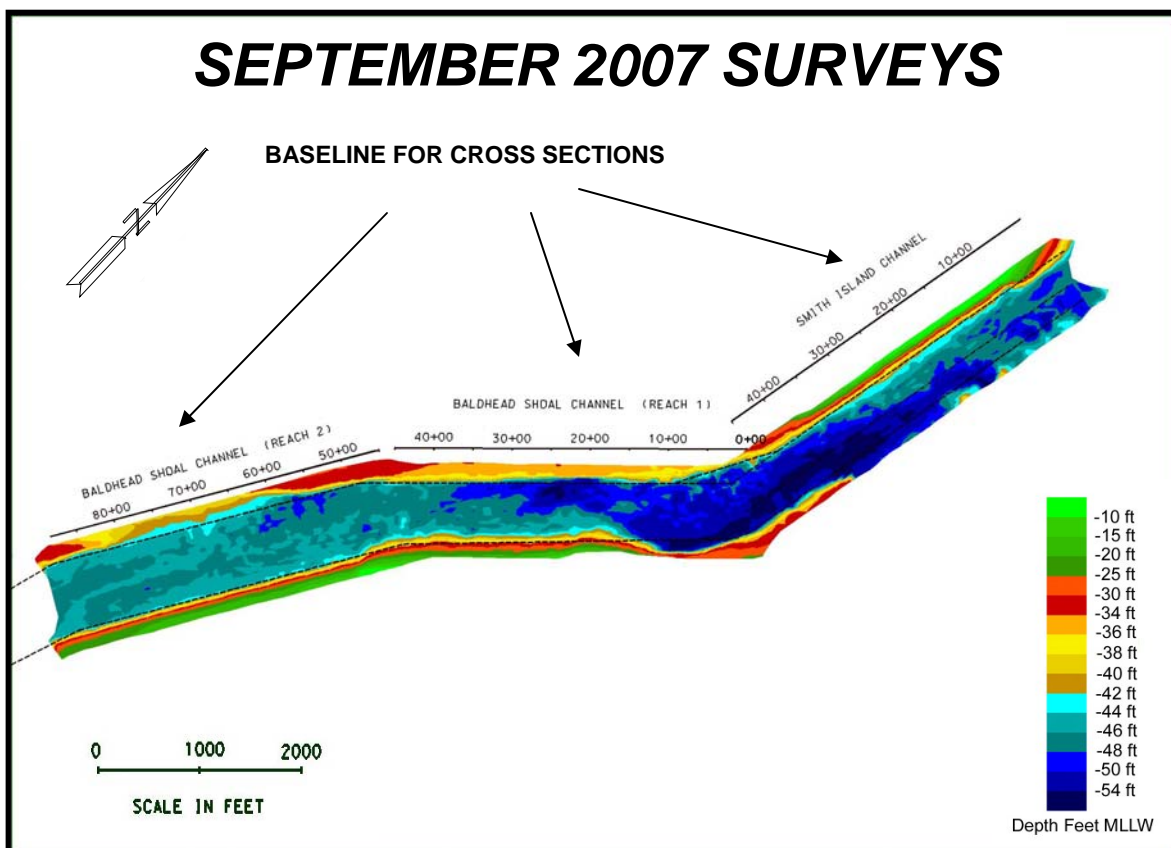


Figure 2 September 2007 Surveys

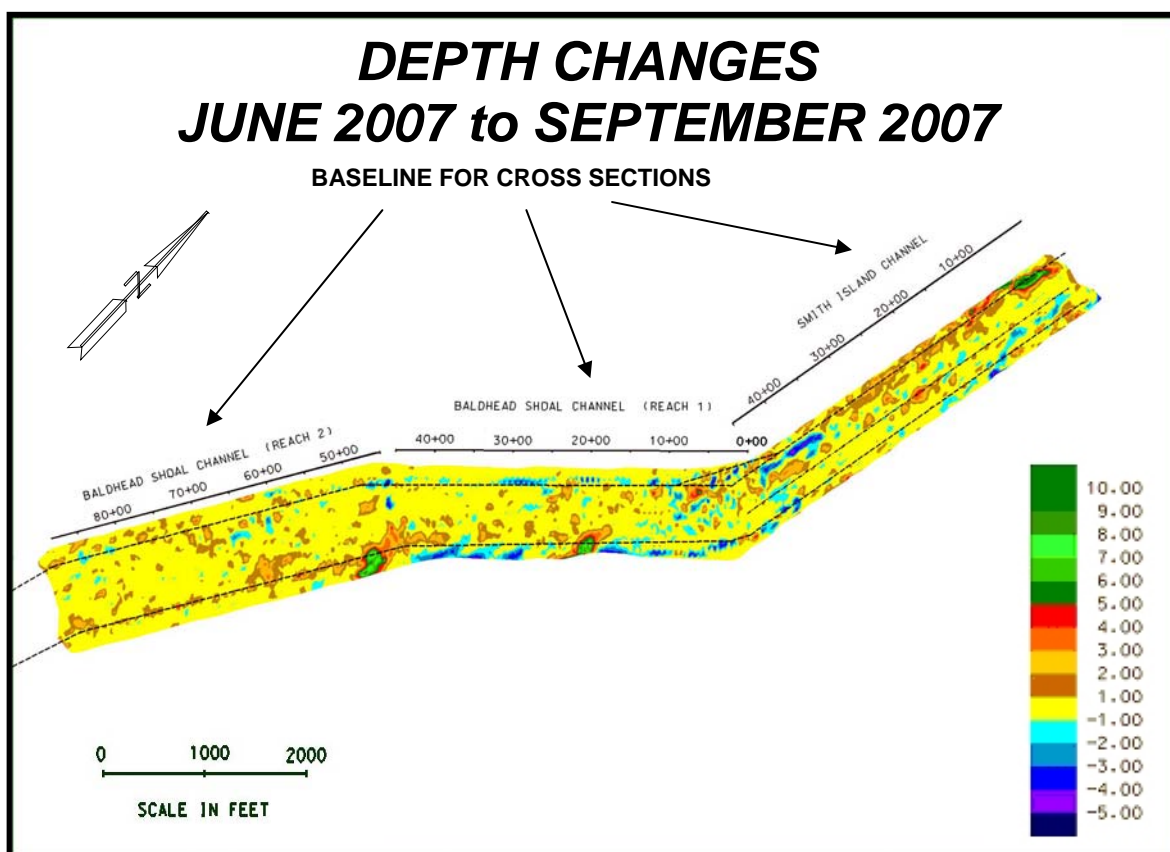


Figure 3 June 07 to September 2007 Depth Changes

# SMITH ISLAND CHANNEL NAVIGABLE WIDTHS

Mar-07 Jun-07 Sep-07

Navigable widths are measured at -42 ft mllw

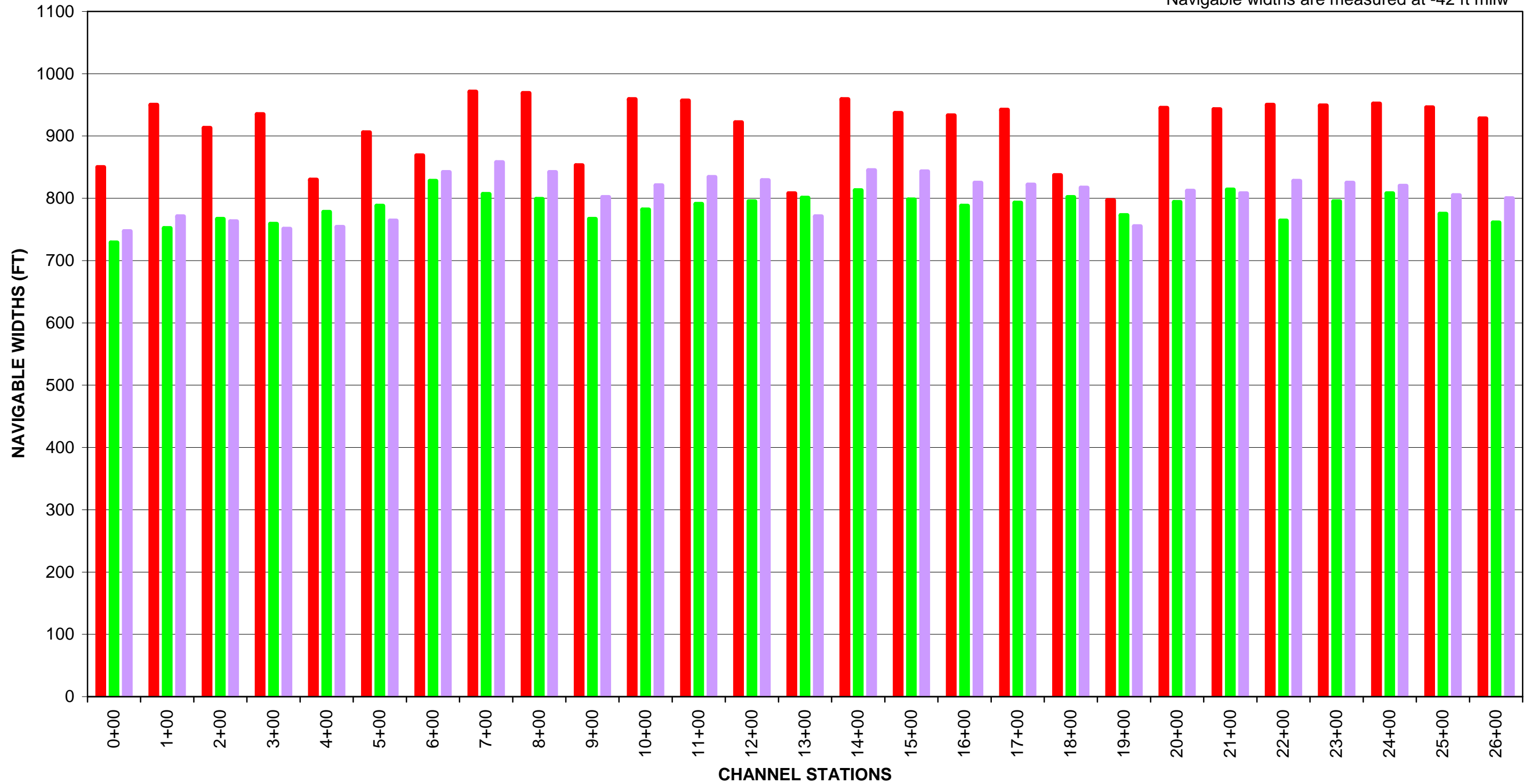


Figure 4 Smith Island Channel Navigable Widths – Stations 0+00 – 26+00

# SMITH ISLAND CHANNEL NAVIGABLE WIDTHS

Mar-07 Jun-07 Sep-07

Navigable widths are measured at -42 ft mllw

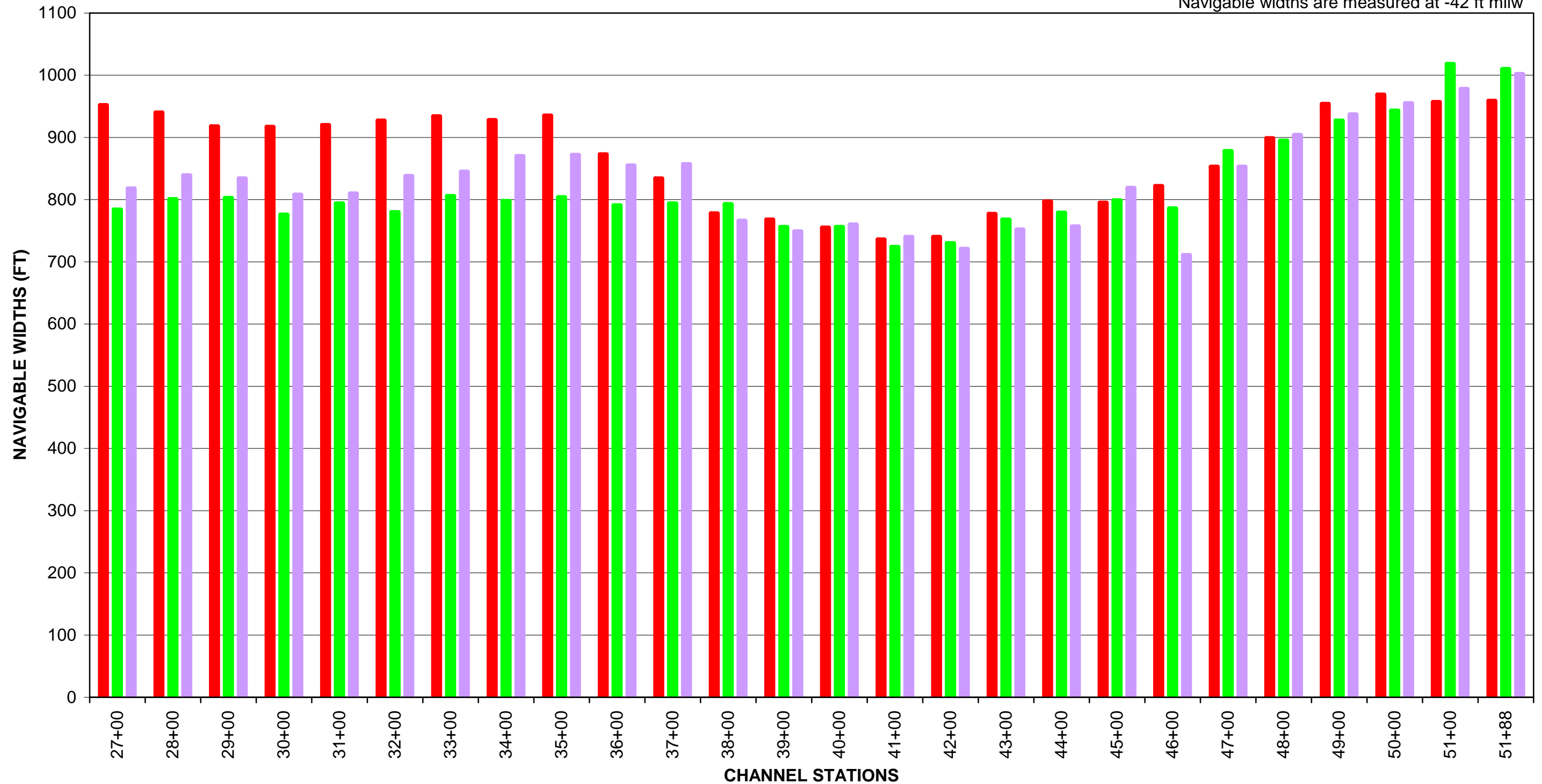
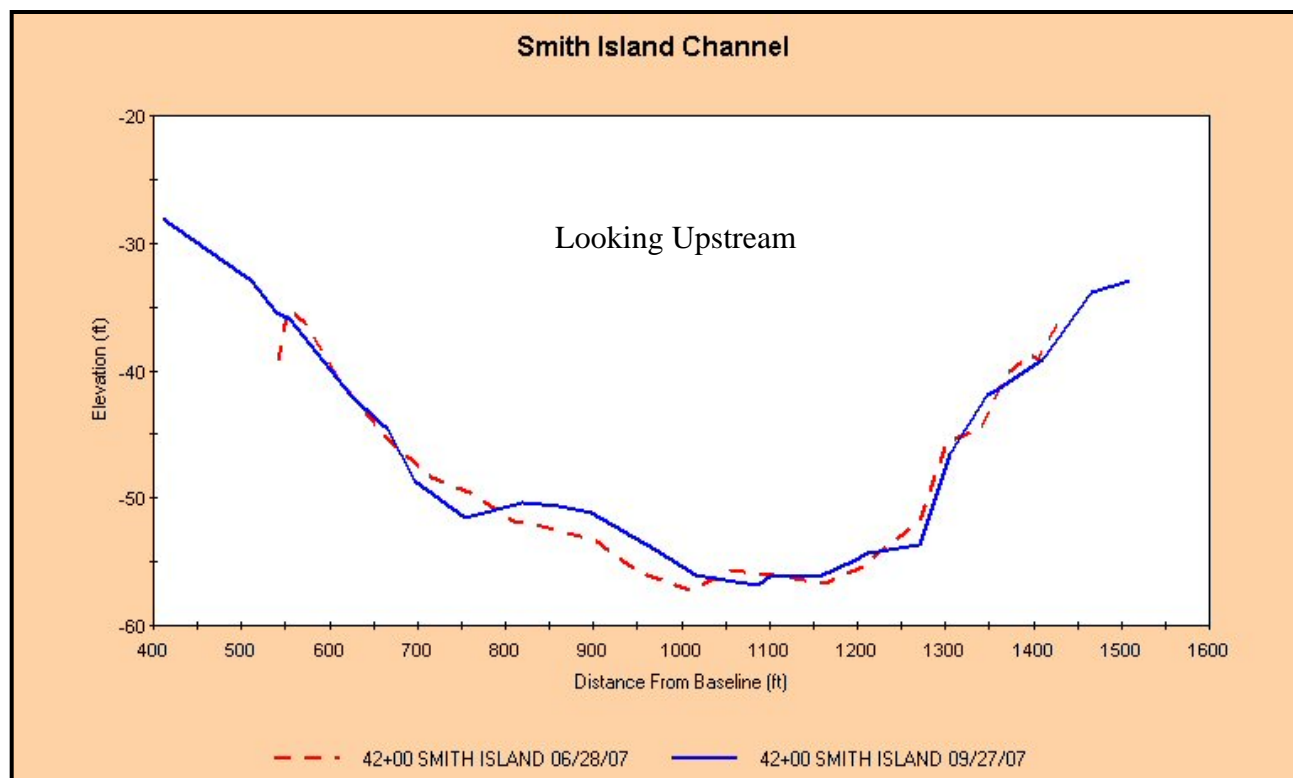
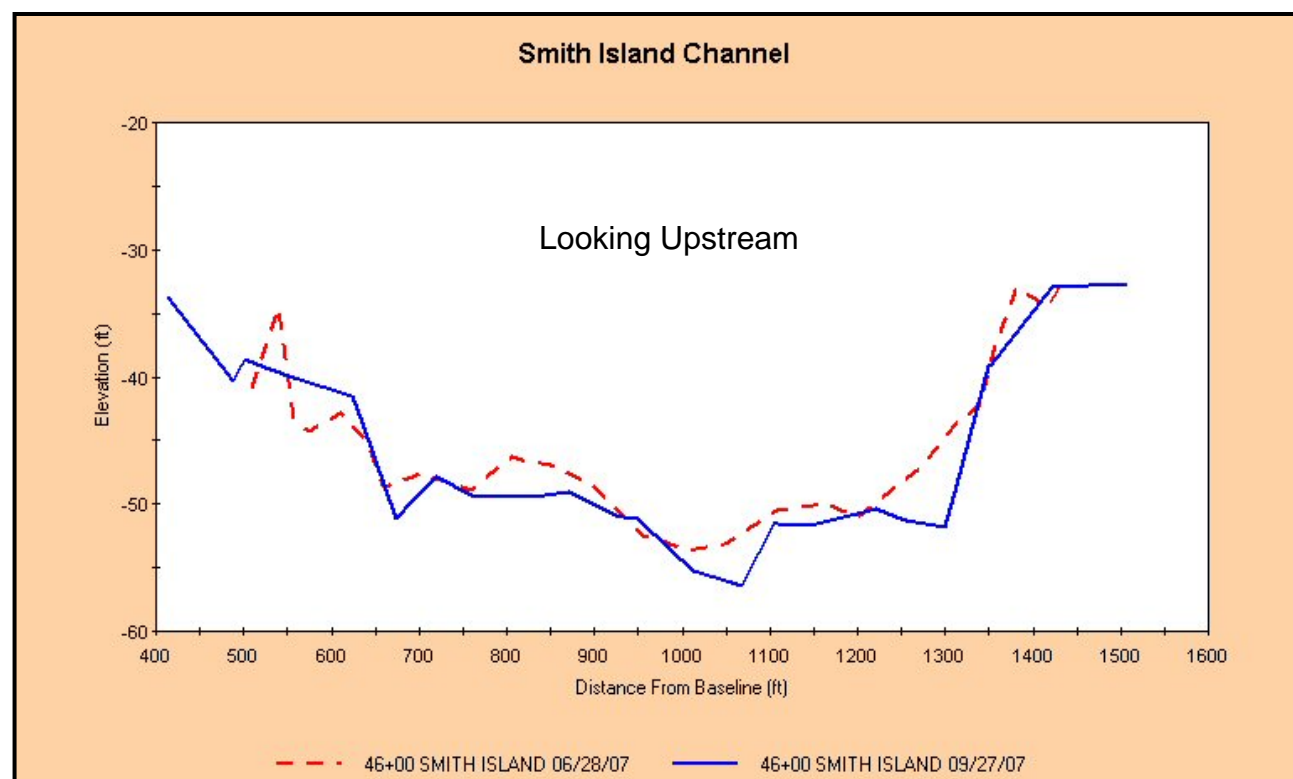


Figure 5 Smith Island Channel Navigable Widths – Stations 27+00 – 52+00



**Figure 6 Smith Island Station 42+00**



**Figure 7 Smith Island Shoal Station 46+00**

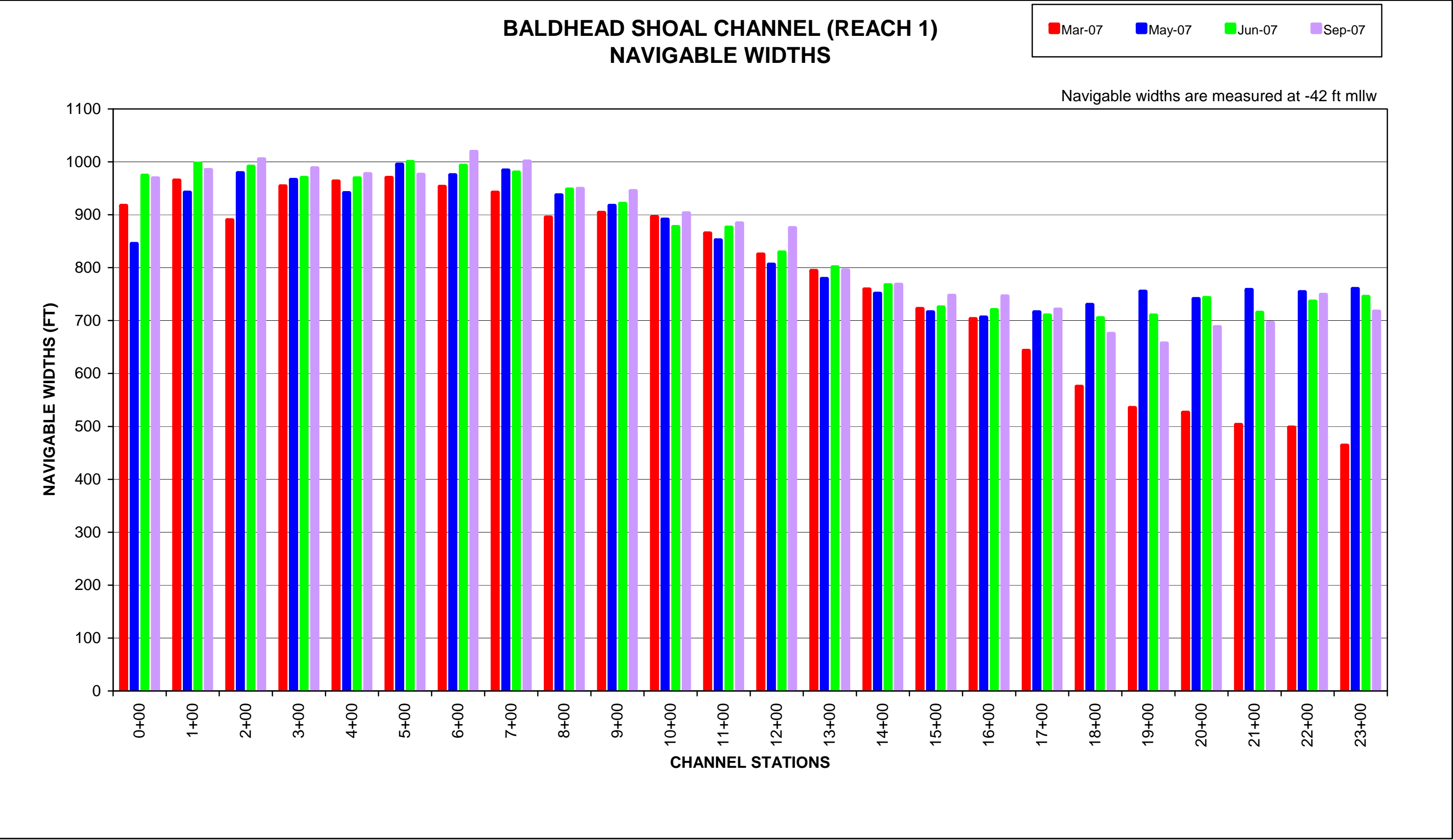


Figure 8 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 0+00 – 23+00

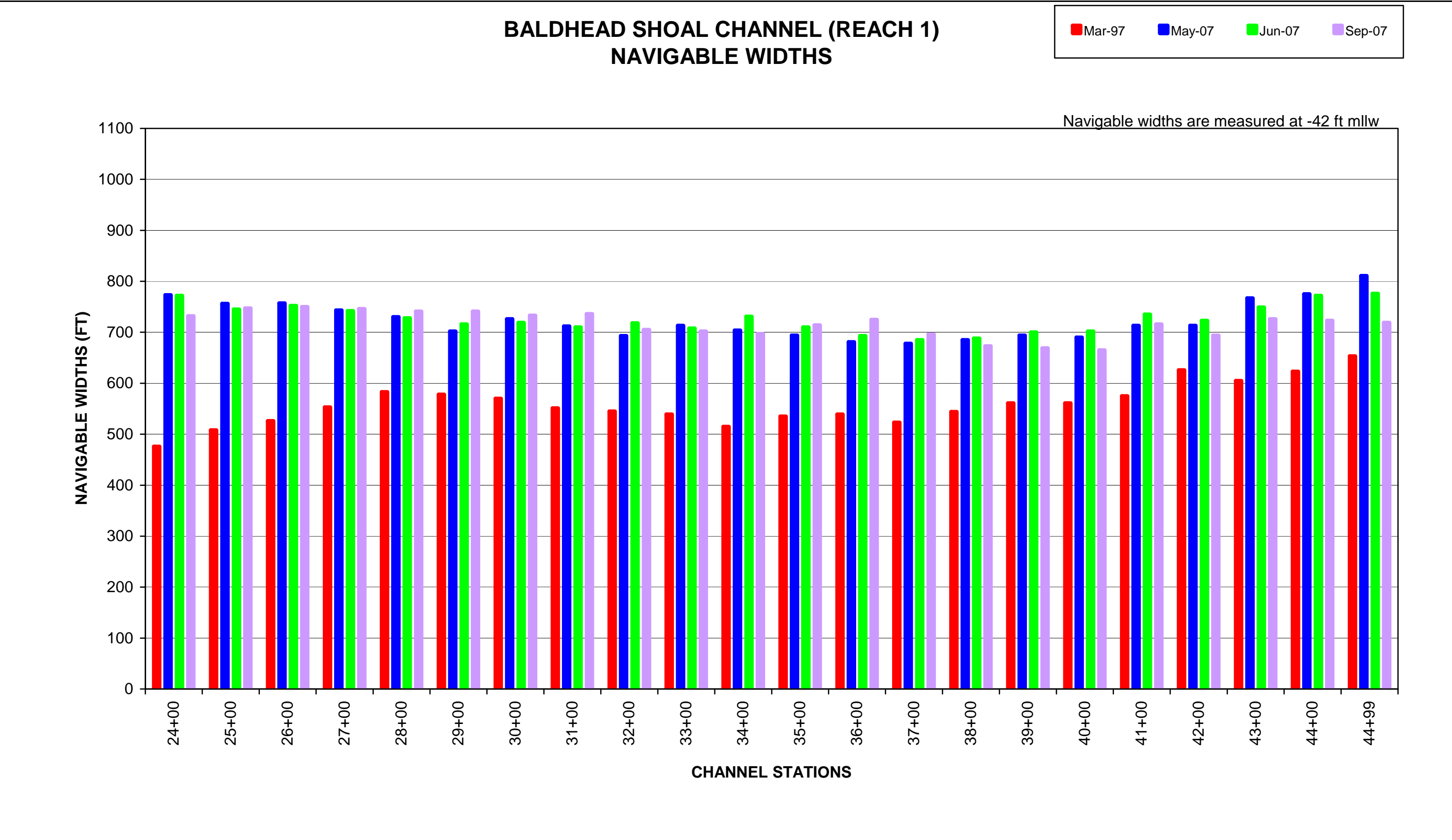
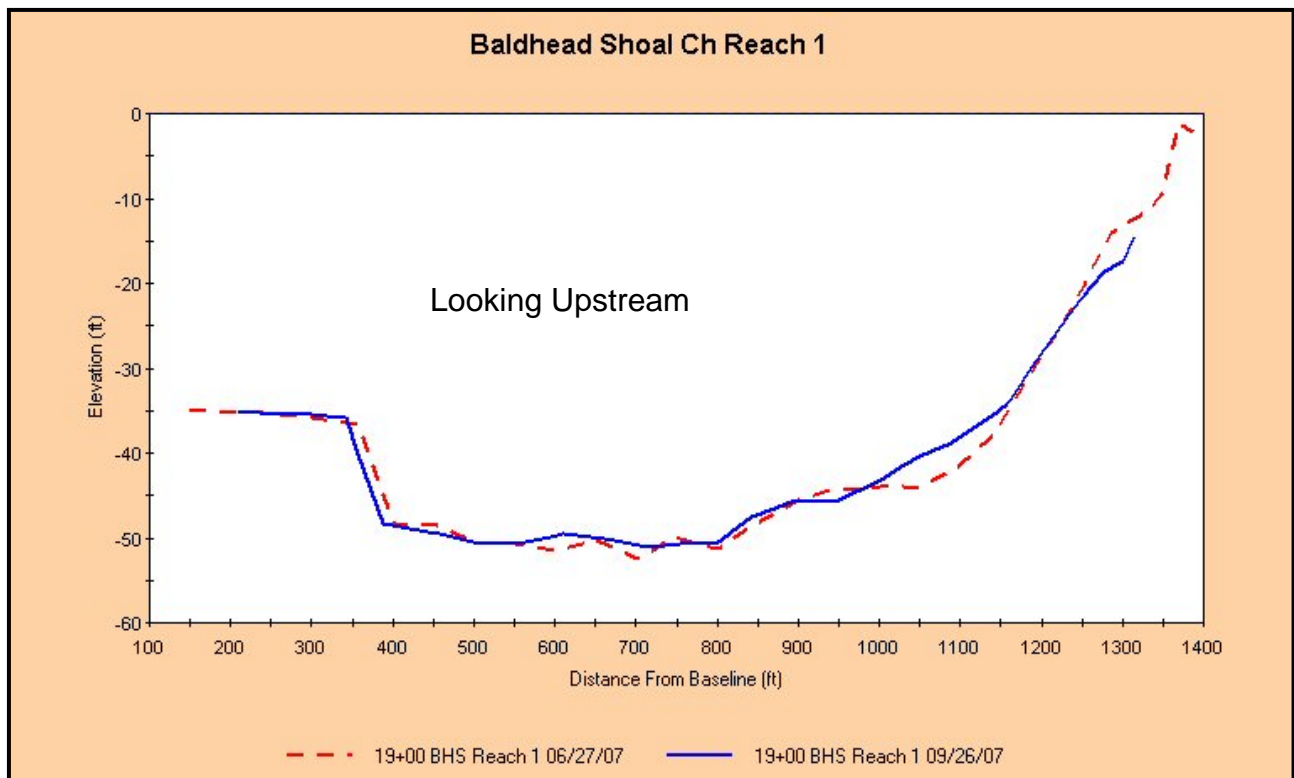
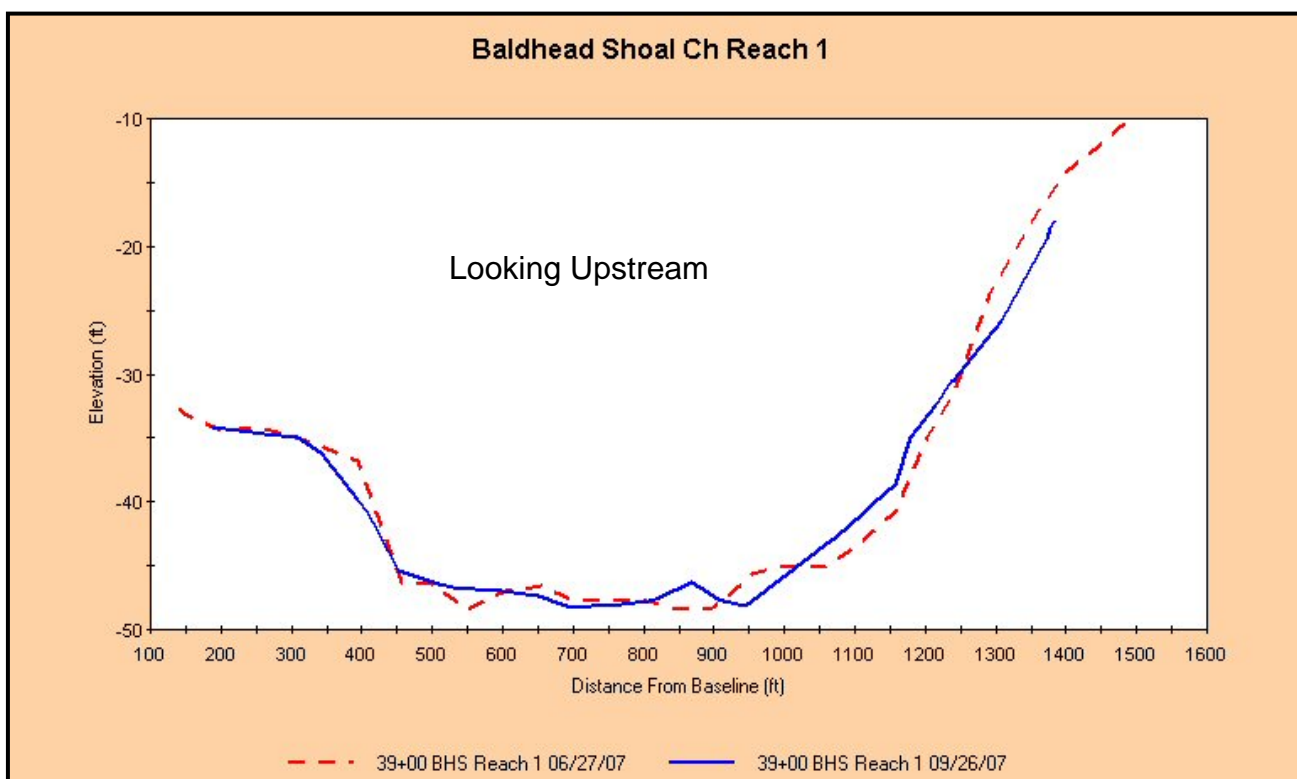


Figure 9 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 24+00 – 44+99

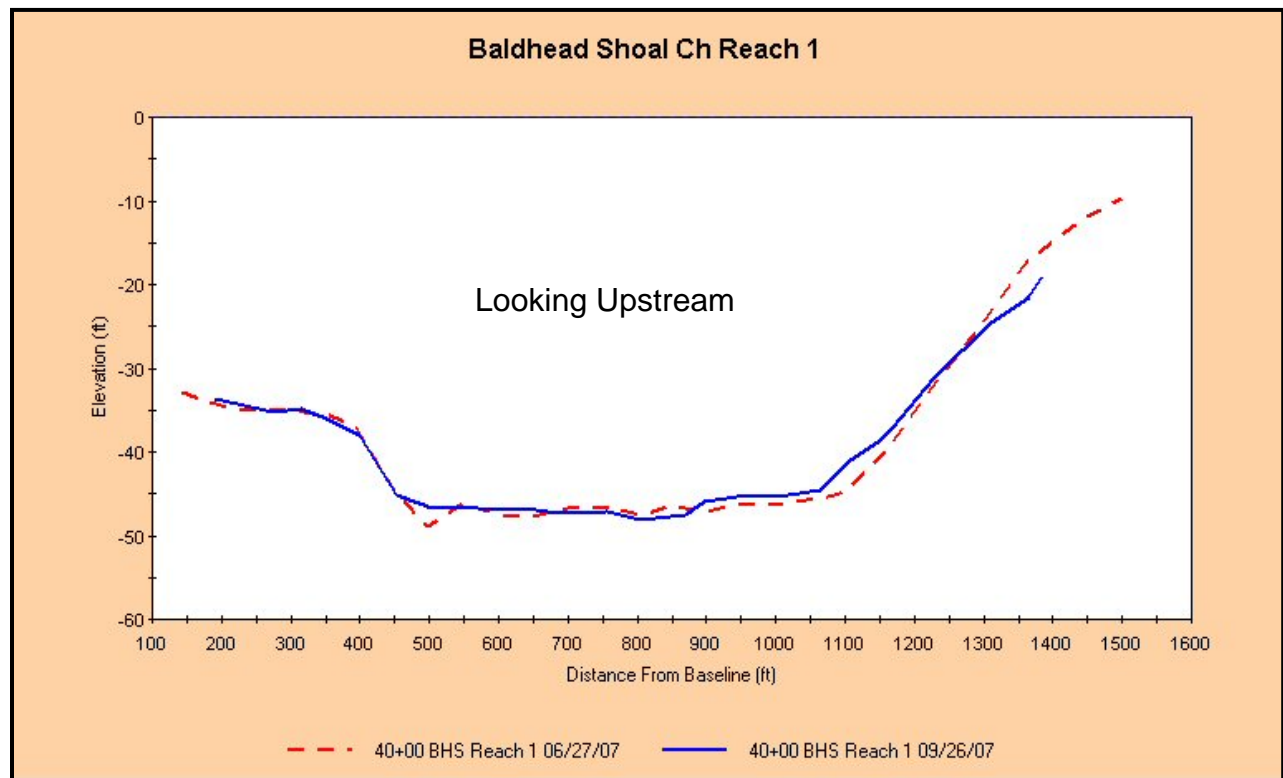




**Figure 10 Baldhead Shoal Station 19+00**



**Figure 11 Baldhead Shoal Station 39+00**



**Figure 12 Baldhead Shoal Station 40+00**

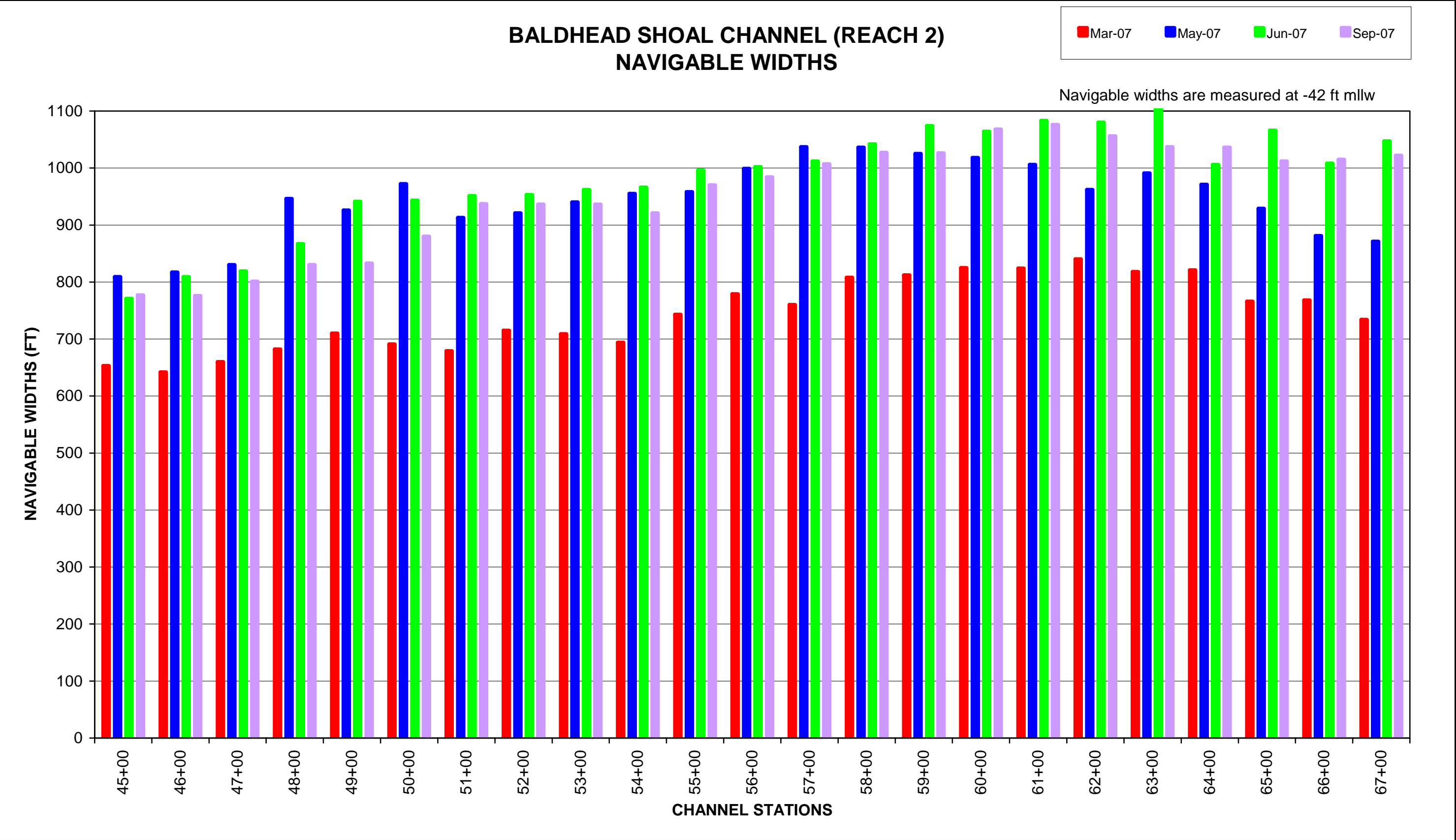


Figure 13 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 45+00 – 67+00

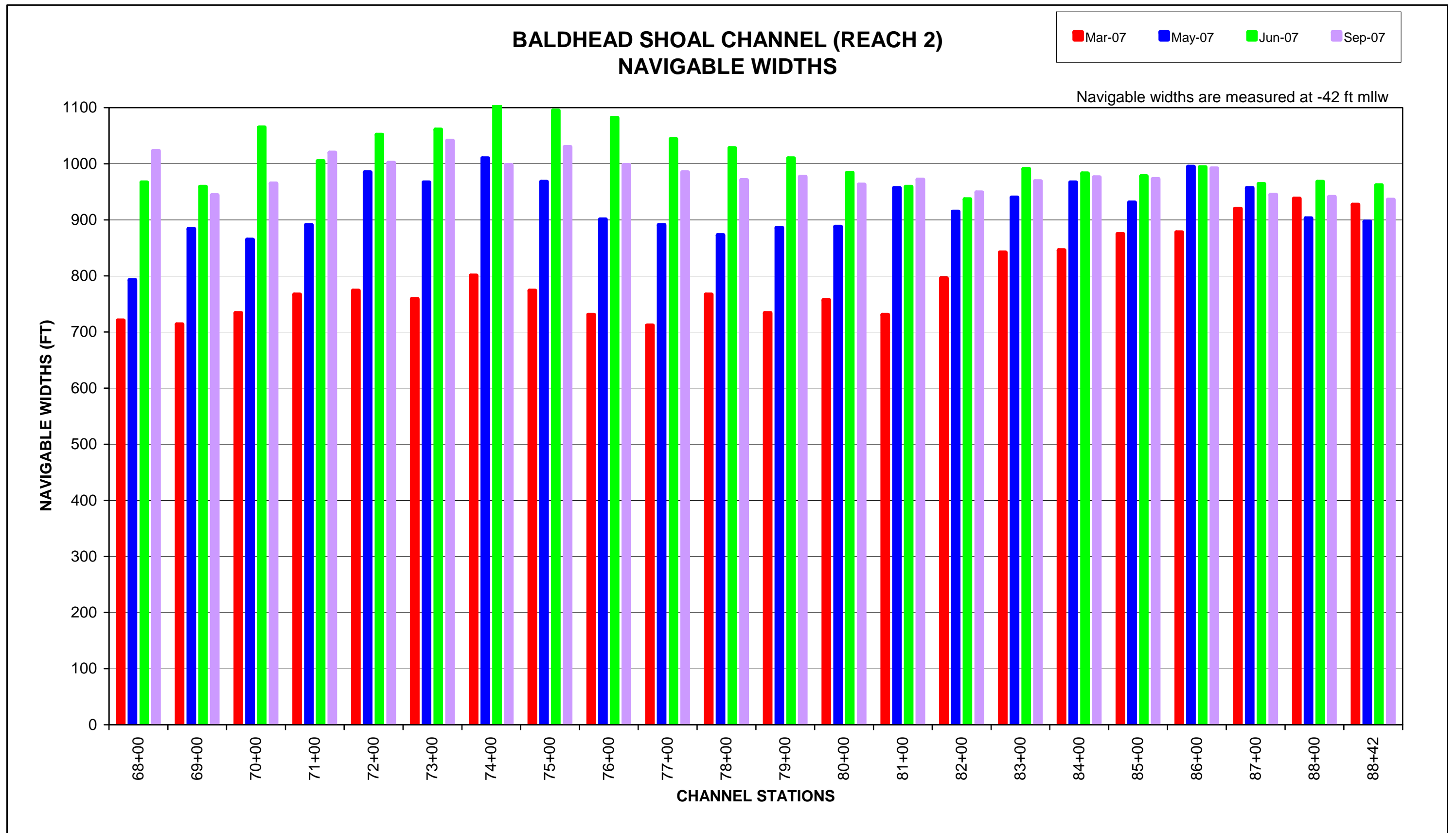
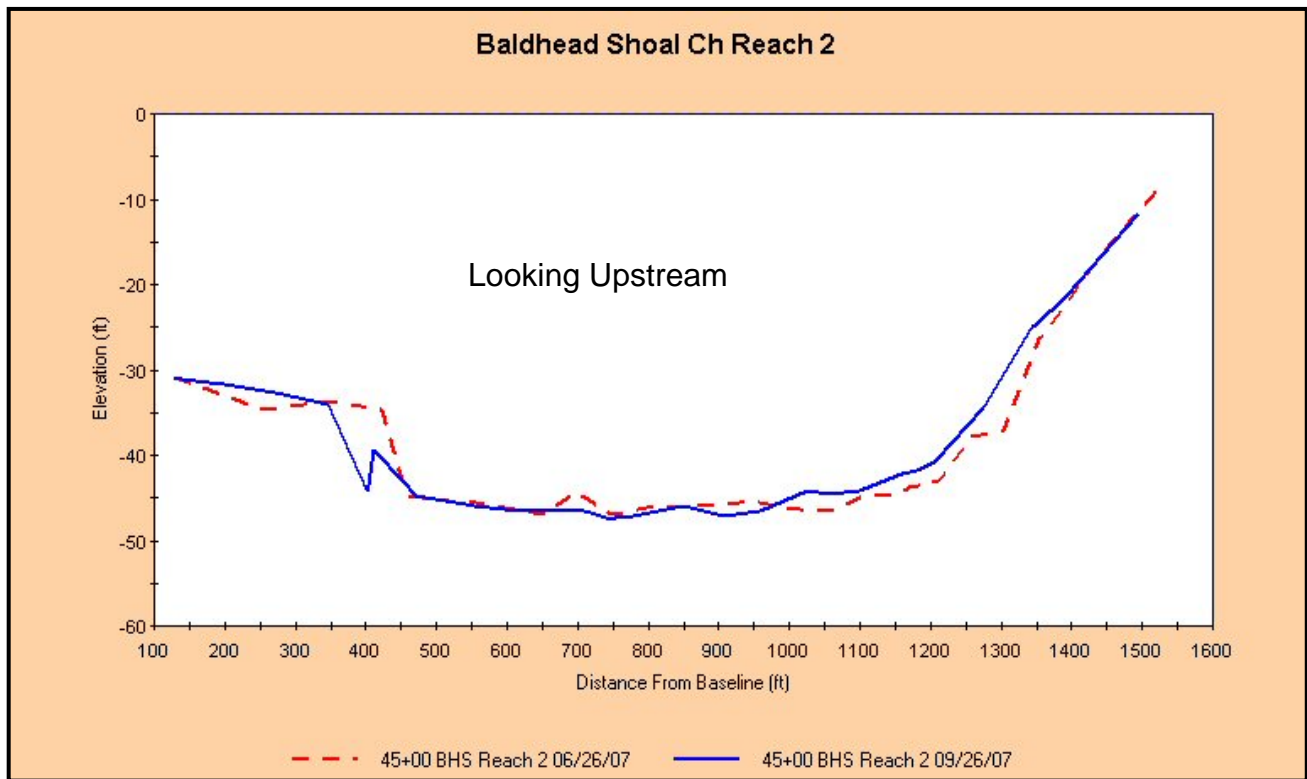
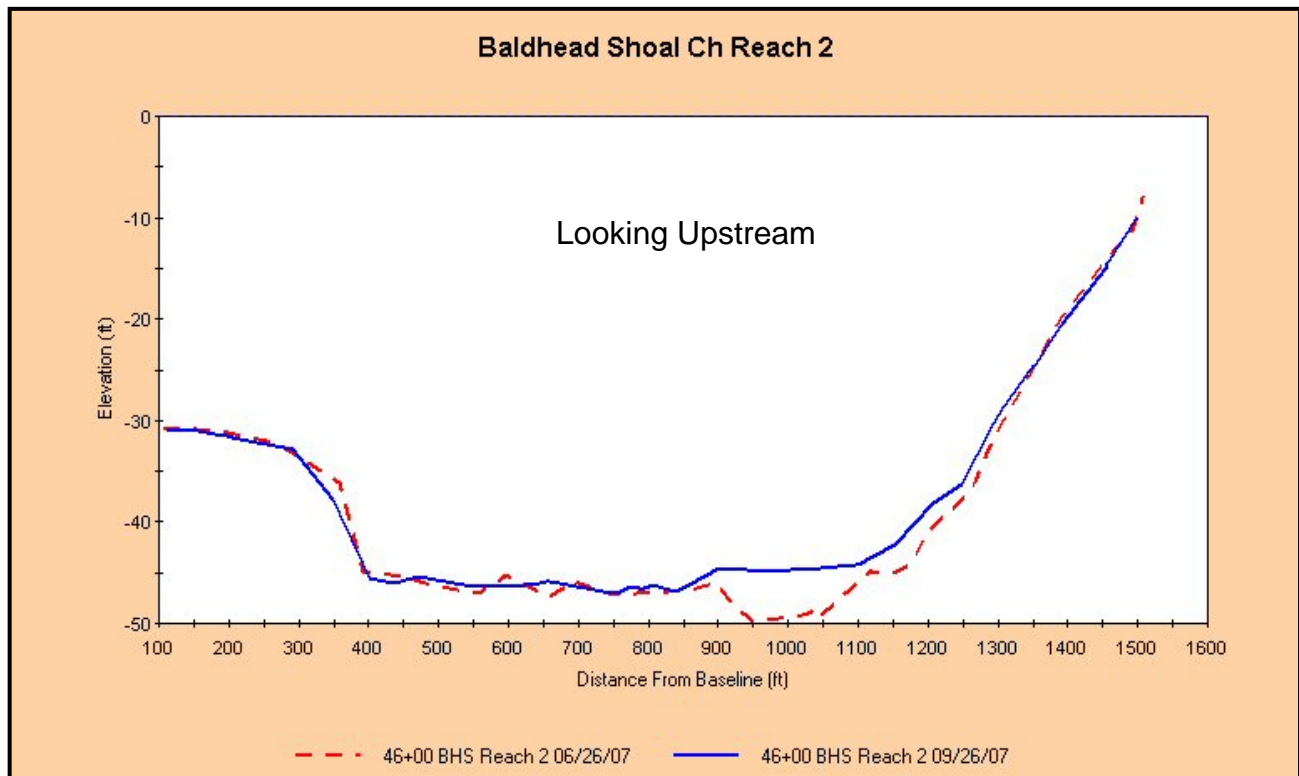


Figure 14 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 68+00 – 89+00



**Figure 15 Baldhead Shoal Station 45+00**



**Figure 16 Baldhead Shoal Station 46+00**